

Notice of Allowability

Application No.

10/825,743

Examiner

Irakli Kiknadze

Applicant(s)

TSUJII, OSAMU

Art Unit

2882

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 3/20/2006.
2. ☒ The allowed claim(s) is/are 1-3,5-7,9,10,12 and 15-23.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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DETAILED ACTION

1. In response to the Office action dated December 15, 2005 the Amendment has been received on March 20, 2006.

Claims 1-3, 5-7 and 15-19 have been amended

Claims 4, 8, 11, 13 and 14 have been canceled without prejudice or disclaimer.

Claims 21-23 have been newly added.

Claims 1-3, 5-7, 9, 10, 12 and 15-23 are currently pending in this application.

Allowable Subject Matter

2. Claims 1-3, 5-7, 9, 10, 12 and 15-23 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Claims 1-3 are allowed because prior art fails to teach or make obvious a radiation imaging apparatus comprising: a calculating unit for calculating a distance between a radiation generating source and a two-dimensional detector, wherein a cone angle of the radiation from the radiation source is selected to be in a range between six degrees and ten degrees based on either of information of the subject and information of imaging conditions, and the calculating unit calculates the distance between the radiation source and the two-dimensional detector based on the selected cone angle as

claimed including all of the limitations of claims 1-3, respectively. Claims 5-7, 12 and 15-20 are allowable by virtue of their dependence.

Claim 10 is allowed because prior art fails to teach or make obvious a radiation imaging apparatus, wherein the an X-ray source and a two-dimensional X-ray detector are disposed at locations a distance which is in a range between 240 cm and 400 cm, where an imaging height (HOV) is equal to or more than 35 cm, an effective diameter of field of view (FOV) is equal to or more than 39 cm, a tube anodic heat capacity of the radiation generating source is equal to or less than 300 KHU, a tube cooling ability is equal to or less than 20 (l/min), and a radiography interval is equal to or less than two minutes as claimed including all of the limitations of claim 10.

Claims 21-23 are allowed because prior art fails to teach or make obvious a radiation imaging apparatus, wherein a calculating unit calculates the distance FDD [mm] between the X-ray source and the two-dimensional X-ray detector based on the following relation

$$FDD=3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

Where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min] as claimed including all of the limitations of claims 21-23, respectively. Claim 9 is allowable by virtue of its dependence.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. D'ambrosio (US Patent 6,459, 760 B1), Morita et al. (US Patent Application Publication 2002/0154729 A1), Tretiakov et al. (US Patent 6,940,948 B1), Tomisaki et al. (US Patent 6,152,598) and Albert (US Patent 4,057,745) teach object positioning and aligning in the X-ray imaging systems.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadzee
March 30, 2006



EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER